Inside Wallops

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NASA Reaches Milestone in Development of an Autonomous Flight Safety System

NASA has recently completed the design phase of a flight safety system to potentially lower range operations cost for the launch of many expendable launch vehicles. The Autonomous Flight Safety System (AFSS) is being developed in three phases by a NASA team of flight systems, operations and range safety personnel.

Design comments have been received from NASA and Department of Defense range safety experts for the single, on-board processor system to be developed in the current phase, Phase III. The core of the flight-qualified system is the design structure comprised of the processor, algorithms and sensors.

"The successful development of the AFSS will demonstrate revolutionary capabilities through new technologies and enable space transportation systems to achieve yet another major goal in affordability," said Steve Kremer, NASA Wallops Flight Facility, Test Range Technology Program Manager.

The AFSS will be an independent subsystem that would be mounted on expendable launch vehicles that require flight safety systems. If successfully demonstrated and adopted for flight by the ELV community, this on-board system for flight termination or destruct should reduce the need for safety specific ground based telemetry and radar tracking.

If required, flight processors will initiate the flight termination function automatically. Redundant on board sensors will gather vehicle navigation data and flight termination will be based upon that data and software-based rules.

In addition, the AFSS will allow for launches from remote locations that do not have extensive ground-based range safety equipment such as tracking radars.

Prototype system flight-testing will take place through lab simulations and on suborbital sounding rockets. Flight-testing of the prototype system is scheduled for September 2004 and flight tests on the redundant system are scheduled for September 2005.

This phase is a three-year effort to produce a flight qualified system that will be tested by existing launch ranges such as Wallops Flight Facility, the Eastern Range, Cape Canaveral, Fla; and the Western Range, Vandenberg Air Force Base, Calif.

NASA Headquarters' Office of Space Flight and Office of Safety and Mission Assurance are providing funding. The project is an example of "One NASA" providing Agency resources from multiple locations to develop new technologies in space flight.

The Wallops Flight Facility is providing project management, systems engineering, sensors, flight algorithms, software support and simulation testing.

Kennedy Space Center in Florida is providing flight computer and sensor interface, software development and process management, flight algorithm support and systems engineering support. Earlier phases of the project were supported by the Marshall Space Flight Center in Alabama.

VSFA Recognizes Wallops Support

Photo VSFA

Bob Marshall, Executive Director of the Virginia Space Flight Academy, (left) presents a plaque of recognition on November 19 to John Campbell, NASA Wallops Senior Manager, for the Facility's support of the Academy. In addition to NASA and several of our contractors, the VSFA also recognized NOAA, Navy and several community organizations for their support.

The VSFA provides week-long residential camps for middle school age students that introduces them to robotics, aeronautics, space research and the many activities at Wallops. In the past two years, more than 350 students have been part of the Academy.

For information on the VSFA, visit www.vaspaceflightacademy.org

Voss Receives High Navy Award

Captain Tim Atkinson, Navy Surface Combat Systems Center, awarded the Navy Meritous Civilian Service Award to Doug Voss, NASA Safety Office, on November 14. The award was in recognition of Voss's support during the 2003 Combat System Ship Qualification Trials (CSSQT). The award is the third highest honorary award under the Navy Incentive Awards Program (NIAP) and the highest NIAP award the Commanding Officer can confer on a civilian employee. Congratulations Doug!

Chimney Fires can be Prevented

Any form of creosote is highly combustible. If it builds up in sufficient quantities – and catches fire inside the chimney flue the result will be a chimney fire. Although any amount of creosote can burn, one should be concerned when creosote builds up in sufficient quantities to sustain a long, hot, destructive chimney fire.

Restricted air supply, unseasoned wood and cooler-than-normal chimney temperatures are factors that can accelerate the buildup of creosote on chimney flue walls. Closed glass doors or failure to open the damper wide enough to move heated smoke up the chimney rapidly may restrict air supply to fireplaces.

A wood stove's air supply can be limited by closing down the stove damper or air inlets too soon and too much, and by improperly using the stovepipe damper to restrict air movement. Burning unseasoned wood keeps the resulting smoke cooler as it moves through the system than if dried, seasoned wood is used. In the case of wood stoves, fully packed loads of wood that give large cool fires and eight or 10 hour burn times also contribute to creosote buildup. Cool flue temperatures also speeds creosote production. Condensation of the unburned by-products of combustion occurs more rapidly in an exterior chimney than in a chimney that runs through the center of a house and exposes only the upper reaches of the flue to the elements.

What to Do if You Have a Chimney Fire

If you realize a chimney fire is occurring, follow these steps:

- Get everyone out of the house, including yourself
- Call the fire department

If you can do so without risk to yourself, these addition steps may help save your home:

- Put a chimney fire extinguisher into the fireplace or wood stove
- Close the glass doors on the fireplace
- Close the air inlets on the wood stove
- Use a garden hose to spray down the roof (not the chimney) so the fire won't spread to the rest of the structure. Once it's over, call a certified chimney sweep to inspect for damage. Chimney fire damage and repair normally is covered homeowner insurance policies.

Quillen Passes Managerial Testing

Photo Courtesy of Jay Huston

Dave Quillen, Operations and Maintenance Facilities Branch Manager for The Cube Corporation and the WICC, recently passed the Certified Plant Maintenance Manager (CPMM) test.

The course and testing is administered by the Association for Facilities Engineering (AFE). It is a comprehensive study and certification addressing specialized knowledge required in the field of plant engineering & facilities management.

Congratulations Dave!

Third Annual Christmas Craft and Goodies Extravaganza

WHERE:
E-2 Conference Room

DATE:
December 3, 11 a.m. to 1 p.m.

Sampling of items to be offered includes Christmas items, crafts, clothing, food mixes, tapes, CD's, and books.

Local author, Jennifer Cording, will be autographing her recently released book, Chincoteague Revisited, featuring photographs by Dorothy Camagna.

E-mail Terry Ewell, terry.a.ewell@nasa.gov, if you wish to reserve a table and send a listing of the items you intend to sell.

New Mishap Reporting System

A new software program will soon replace the old IRIS mishap reporting system currently being used. The new system will be NASA wide.

Howard Kilmon, NASA Safety Office, will be the Wallops administrator and contact point for the program. He also will be offering instruction in the new system to civil service and contractor supervisors, contract safety officers, and Health Unit personnel. All of these individuals will have access to the program through the web. For further information, contact Kilmon on x1486.

Holiday Hours for the WEMA Cafeteria

The WEMA Cafeteria will be closed Friday, November 28, for the Thanksgiving holiday and Friday, December 26, for the Christmas holiday

The Cafeteria will be open and serving a light fare the week of December 29 with the exception of New Year's day!

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Editor: Betty Flowers